
Cardiac Rehabilitation in Chronic Heart Failure: Effect of 8-Week, High-Intensity Interval Training Versus Continuous Training

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Setting the scene:

The objectives of the study are to compare the effects of an 8-week, high-intensity interval training protocol versus continuous training in chronic heart failure patients.

What did they do?

Twenty-six patients with chronic heart failure were enrolled in an 8-week tailored multidisciplinary cardiac rehabilitation program. Criteria for inclusion were stable chronic heart failure and a left ventricular ejection fraction less than 40%. They received a beta-blocker, diuretic therapy. Patients were randomly assigned to 2 groups: 1 group (n=12) performed rehabilitation with interval training (IT) and 1 group (n=14) performed rehabilitation with continuous training (CT). The physical activity program included 13 hours of exercise per week (2–3h/d, 5d/wk). It included 6 sessions of 71 minutes of IT or 61 minutes of CT, 4 hours of gymnastics, and 3 hours of gymnastics in water. Gymnastic training consisted of a 5-minute warm-up followed by 45 minutes of strengthening exercises, stretching, and relaxation. The program also included therapeutic educational sessions on risk factors and physical practice. After a 10-minute warm-up phase, IT consisted of 12 repetitions of 30 seconds of cycling exercise, followed by 60 seconds of complete rest. The exercise intensity was 50% and 80% of the maximal power reached during a steep ramp test during the first 4 weeks and the last 4 weeks, respectively. Each training session consisted of 3 series (12 repetitions of 30s of exercise), separated by 5 minutes of rest. Half of the CT was performed on a treadmill and half on a cycle ergometer. CT was composed of a 10-minute warm-up followed by 45 minutes of aerobic exercise corresponding to the heart rate at the VT1 and a final 5 minutes of active recovery. Patients in the IT group practiced 168 minutes of exercise weekly, and patients in the CT group practiced 360 minutes of exercise weekly. Patients were assessed by cardiopulmonary exercise testing.

Takeaway message:

The present study demonstrates that a rehabilitation program of 8 weeks with very high-intensity IT in patients with chronic heart failure can result in considerable improvements in physical capacity. These parameters are considered prognostic markers of chronic heart failure. CT programs seem to have lower impact on this capacity. These results can contribute to improve the workout training intervals used for these patients.